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ABSTRACT

This study compared the task activities and social interactions of 10 five-year-old kindergarten children in a mixed-age (MA) classroom of children age 4 through 6 to those of ten 5-year-old kindergartners in an organizationally equivalent same-age (SA) classroom. Compared to children in the SA class, kindergartners in the MA class remained engaged in their classroom activities for longer periods of time and exhibited more prosocial behavior. This study offers some empirical support for MA classes in early childhood education and suggests contexts in which cross-age interaction is most likely to be beneficial. (MDM)

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# The Social Interactions and Task Activities of Young Children in Mixed-age and Same-age Classrooms: An Observational Study

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# ABSTRACT

Advocates of mixed-age grouping in early childhood education suggest that multi-age classrooms have several advantages over same-age classrooms for children's social and cognitive development. Using a time-sampling, systematic behavioral observational methodology, this study compared the task activities and social interactions of 10 kindergarten children (5-yr olds) in a mixed-age (MA) classroom (4, 5, & 6-yr olds), to those of 10 kindergarteners in an organizationally-equivalent, same-age (SA) classroom. Children from both classes were observed during four different classroom contexts which varied in the amount of teacher-provided structure.

Compared to children in the SA class, kindergarteners in the MA class remained engaged in their classroom activities for longer periods of time, and in some of the classroom contexts, they engaged in more goal-directed task activities and exhibited more prosocial behavior. Mixed-age groups seem to have a favorable effect on children's social interactions and task behavior during classroom contexts with an intermediate amount of structure. That is, the benefits of mixed-age groups emerge when children are able to spontaneously engage in challenging goal-directed activities with limited adult guidance, and not when classroom activities are either strictly teacher-directed or completely unstructured (i.e., free play).

This study offers some empirical support for mixed-age grouping in early childhood education, fails to replicate a number of the earlier findings in the literature, and suggests in which classroom contexts cross-age interaction is most likely to be beneficial.

# INTRODUCTION / RATIONALE

Theoretical Relevance:

• The following questions are of relevance to developmental psychologists whose theoretical perspectives emphasize the social and cultural contexts of development:

- How do peers influence child development?
- How do the social interactions of different-age vs. same-age peers differ?
- What effect do different types of social interactions have on children's social and cognitive development?

Educational Relevance:

• Several scholars have claimed that mixed-age grouping is favorable to same-age grouping for promoting children's social and cognitive development in early childhood classrooms. (Elkind, 1989; Hartup, 1983; Katz, Evangelou, & Hartman, 1990; Roopnarine & Bright, 1992)

• Empirical support for these claims, however, is limited.

• Educators want to know not only whether mixed-age groups are favorable to same-age groups in a global way, but also under which classroom conditions does it appear to be beneficial.

Methodological Relevance:

• As methodological improvements over earlier studies of multi-age vs. same age classroom interaction, this investigation:

- randomly assigned children to either the same-age or mixed-age class
- compared classrooms whose activities and organization were essentially equivalent except for age-composition
- systematically observed children in four different classroom contexts

# RESEARCH QUESTIONS

1) How much do young children in mixed-age classes spontaneously interact with different-age classmates, and how does this vary by classroom context?

2) Do children in mixed-age classes exhibit more prosocial behavior (helping, sharing, collaborating, and teaching) and less antisocial behavior (fighting, yelling, teasing) than children in same-age classes, and if so, in which classroom contexts does this occur?

3) Do children engage in more goal-directed activity in mixed-age classrooms, compared to same-age classes, and if so, in which contexts?

4) Do children in mixed-age classes spend more time-on-task, or remain engaged longer in their activities, than children in same-age classes, and if so, in which classroom contexts?

5) Do children in mixed-age classes spend less time interacting directly with their teachers than children in same-age classes, and if so, in which classroom contexts does this occur?

# METHOD

## SUBJECTS

***20 Kindergarteners*** (All low-income - 14 White, 5 Hispanic, 1 Black)

10 - Same-Age Kindergarten Class
(5 Girls & 5 Boys)

10 - Mixed-Age Class (Pre-K's, Kindergarteners, 1st-Graders)
(5 Girls & 5 Boys)

## PROCEDURE

***710 Naturalistic Observations*** (Pre-determined Random Order)

- 356 Mixed-Age Class
- 354 Same-Age Class

***Time-Sampling Observation Method:***

- **Each child - approximately 45 observations:**
  - **nine, 10 minute observation sets**
    - **each set:**
      - **five, 30-second periods of direct observation separated by 90-second intervals.**

***Behavioral Observation Checklist*** (Coding Sheet)

***Cassette Recorder with Pre-recorded Time Signals***

# VARIABLES / MEASURES

Children were observed in the following four classroom contexts, listed in ascending order of teacher-provided structure:

**Free Play (FP)** Recess outside

**Plan/Do/Review (PDR)** A tacitly structured activity in which children can choose who they play with and what they do, but they are limited to a number of "activity areas" including for example, the "block area, or the painting corner.

**Teacher-Directed Spontaneous (TDS)** Semi-structured, curriculum-based activities where the teacher gives the children a particular task to do (i.e., writing into a journal, or completing a measurement exercise), but the children spontaneously choose who, if anyone, they want to work with, and how much and in what fashion, the task would be done.

**Teacher-Directed Given (TDG)** Essentially the same as TDS except that the teacher would tell the children who they were to work with, and give more explicit instructions about what exactly the children were to do with their time, the task materials, and their partner(s).

The following information was recorded on the checklist instrument for each observation:

**Classroom** (Mixed-Age Same-Age)

**Classroom Context** (TDG TDS PDR FP)

**The Child's Activity**

(1) Work = Behavior that is clearly goal-directed
(2) Play = Behavior as an end in itself
(3) Other = None of the above

**The Child's Social Context**

Alone With Peer(s)
With Adult(s) With Adult(s) & Peer(s)

**The Age of Child's Companion(s)**

Younger Same-Age
Older Mix

**Quality of Social Behavior**

Prosocial = (Helping, Sharing, Collaborating, Teaching)
Antisocial = (Fighting, Yelling, Teasing)

**Duration of Activity**

Whether the child was engaged in the same activity as in the previous observation.

# RESULTS

1) Overall, the children in the mixed-age class spent a considerable amount of their time (48%) voluntarily interacting with older and younger classmates. The children chose to interact with different-aged classmates most often during TDS (54%), somewhat less often during PDR (49%), and the least during FP (43%).

2) There was no difference in the total amount of prosocial behavior exhibited by the children in the two classes. However, during one the classroom contexts with an intermediate amount of structure (Plan/Do/Review), children in the mixed-age class exhibited significantly more prosocial behavior (34%) than did children in the SA class (13%).

3) Although children in the mixed-age class engaged in less antisocial behavior compared to the same-age class, this difference was not significant due to the low incidence of antisocial behavior, in general, in the two classes.

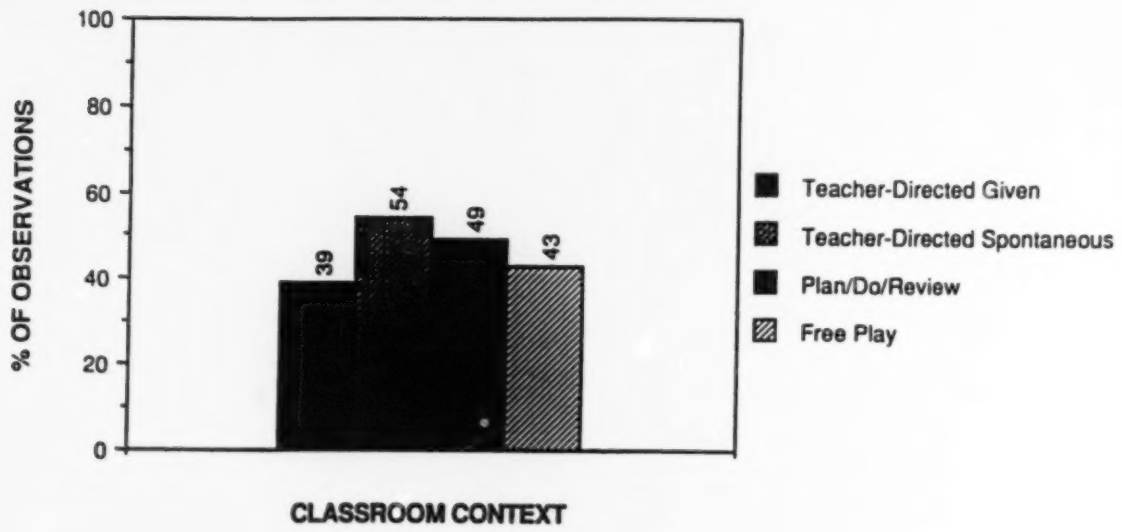
4) Compared to children in the same-age class, youngsters in the mixed-age class spent more time-on-task, that is, they remained engaged in their activities for longer periods of time. This difference was most pronounced during the semi-structured classroom context, Teacher-Directed Spontaneous (TDS).

5) Kindergarteners in the mixed-age class engaged in more goal-directed activity than did the children in the same-age class, but only during Free Play (FP) was this significant.

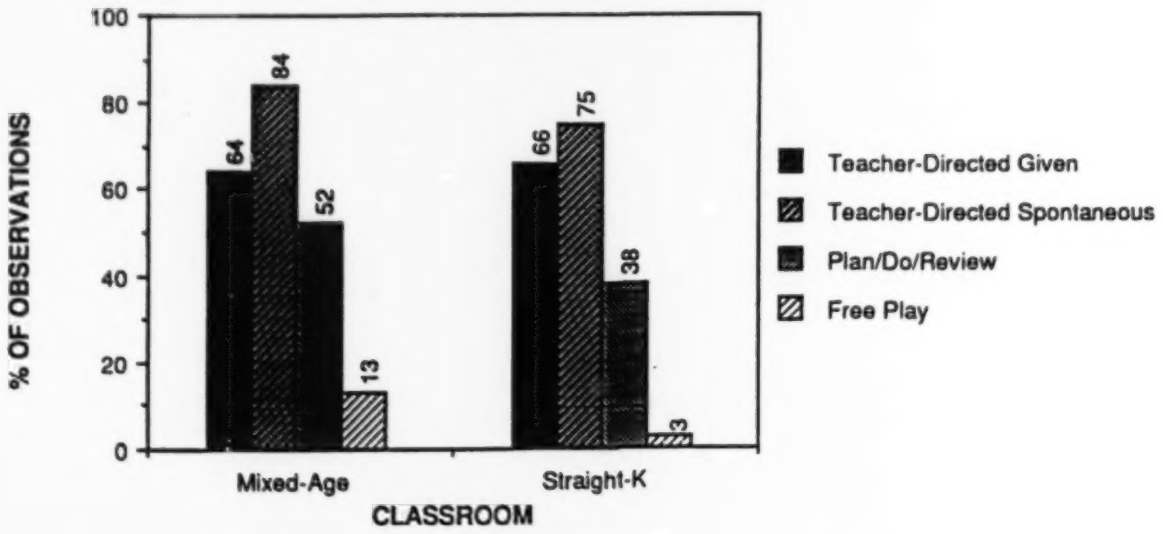
6) Cross-age interaction was positively associated with goal-directed task activity.

7) Contrary to expectations from previous research, children in the mixed-age class did not spend less time interacting with their teachers compared to children in the same-age class.

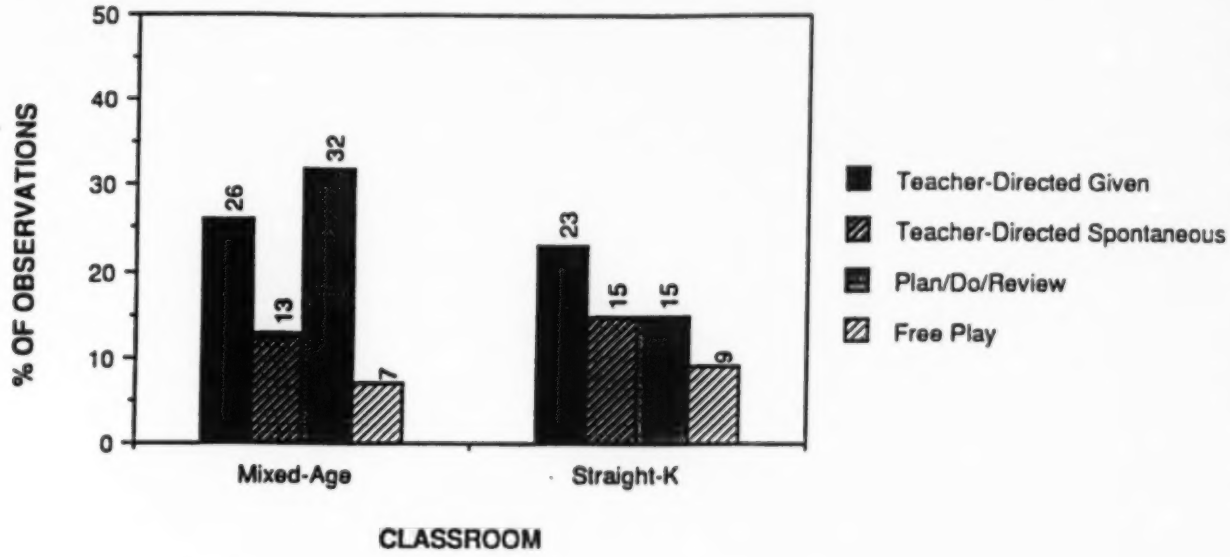
## PERCENTAGE OF TIME THE CHILDREN IN THE MIXED-AGE CLASS INTERACTED WITH A CHILD OF A DIFFERENT AGE, BY CONTEXT.



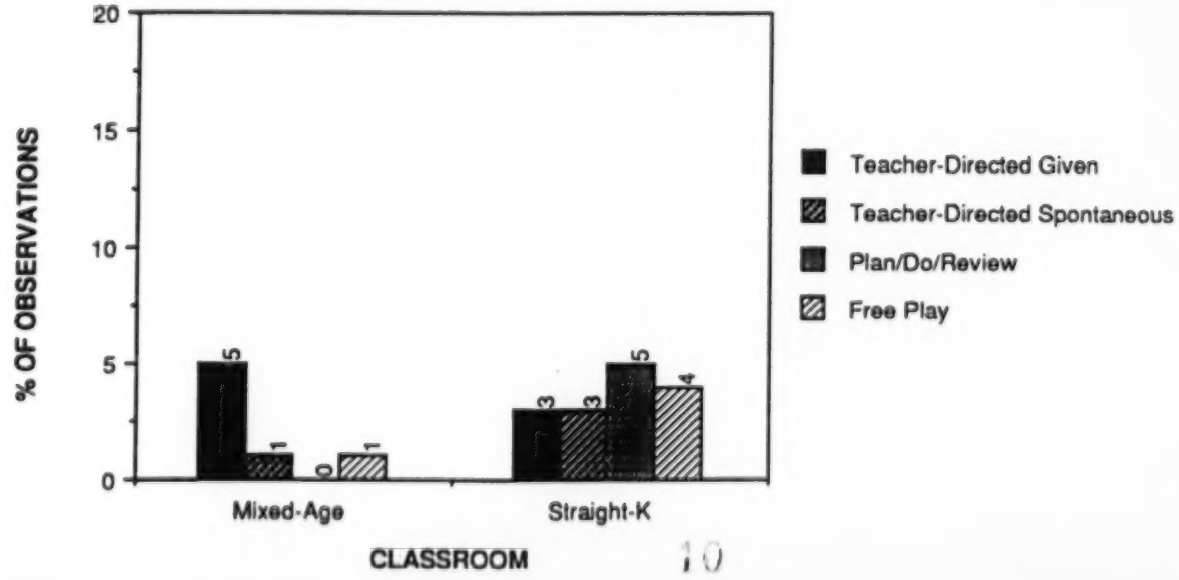

## PERCENTAGE OF TIME CHILDREN WERE ENGAGED IN GOAL-DIRECTED ACTIVITY, BY CONTEXT



## PERCENTAGE OF TIME CHILDREN ENGAGED IN PROSOCIAL BEHAVIOR (TEACHING, HELPING, SHARING, MUTUAL COLLABORATION), BY CONTEXT




## PERCENTAGE OF TIME CHILDREN WERE ENGAGED IN ANTISOCIAL BEHAVIOR, BY CONTEXT



# CONCLUSIONS

• Multi-age classrooms have been claimed to have several advantages over same-age classrooms for promoting young children's social and cognitive development.

• The results of this study offer some empirical support, though limited, for mixed-age grouping in early childhood education. This study fails to substantiate a number of the claims made about mixed-age groups and does not replicate some of the earlier findings in the literature.

• Most importantly, this study suggests that the benefits of mixed-age interaction in early childhood classrooms differ by the type of classroom activity or context.

• The advantages of mixed-age grouping for children's social interactions and task behavior seem to emerge during classroom contexts with an intermediate amount of structure; that is, 1) when children were able to spontaneously engage in challenging goal-directed activities under present, but limited adult guidance, and 2) when the teacher allowed the children to spontaneously form their own small groups (rather than when the teacher formed the groups herself).

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